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TITLE : FORMATION OF METALLIC FILM ON SURFACE OF ORGANIC SUBSTRATE

ABSTRACT : PROBLEM TO BE SOLVED: To form a metallic film with sufficiently high adhesion on the surface of a smooth org. substrate by activating the surface of the org. substrate by photoirradiation, etc., and executing a vapor growth method after treating with a silane coupling agent containing a specified sulfur atom.

SOLUTION: The activating treatment is applied on the surface of the org. substrate such as epoxy resin. This treatment is executed by an irradiation treatment of a light such as laser having a wavelength activating a bond or a plasma treatment. Then the surface of the substrate is subjected to a coupling treatment with a sulfur atom containing silane coupling agent expressed by the general formula, $X-Si-(OR)_3$ (X is an org. reactive group containing sulfur atom. R is $-CH_3$ or $-CH_2-CH_3$). In this way, a mercapto group excellent in reactivity with metal is formed. Then the material is heat-treated at about 50-120°C at need or subjected to the plasma treatment with a gas plasma such as oxygen, nitrogen and argon, then the metallic film is formed on this substrate surface by using the vapor growth method.

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